

Mission:

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



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Vision: To be the Healthiest State in the Nation

Florida Actual versus Expected Teen Births and Repeat Teen Births By County 2016 through 2018

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Introduction

In the United States, teen birth rates have reached historic lows [1]. In Florida, a total of 9,828 babies were born to teens aged 15-19 years in 2018 for a live birth rate of 16.7 per 1,000 teens in this age group. Furthermore, the 2018 birth rates fell by 8.2% for teens aged 15-17 years and 9.9% for teens aged 18-19 years with an overall decrease of 9.6% for all teens (i.e., 15-19 years old) [2]. Although reasons for the decline cannot be fully explained, according to the Centers for Disease Control and Prevention (CDC), teens appear to be less sexually active, and those teens who are sexually active seem to be using birth control more effectively [3].

While teen birth rates have declined, teen pregnancy prevention continues to be a public health priority. Studies indicate pregnant teens are more likely to receive late or no prenatal care, have gestational hypertension and anemia, and have inadequate maternal weight gain [4]. Teens are also more likely to have a pre-term delivery and a low birthweight baby, increasing the risk of child developmental delay, illness, and mortality [5,6]. Additionally, teen mothers are less likely than their peers to complete high school and more likely to live below the poverty level and rely on public assistance [7].

The purpose of this annual analysis is to identify geographic areas in Florida where teen birth rates and repeat teen birth rates are statistically significantly higher than would be expected considering the unique demographics of each area. This information may be used to encourage further, more detailed analyses to investigate factors that contribute to the higher than expected rates and to develop intervention strategies for improving outcomes.

Methods

In this analysis, the actual number of teen births and repeat teen births are compared to the expected number for each county. The expected numbers are calculated by applying the state rates to the data for each county. The assumption is the expected rates for the counties are equal to the statewide rates. The difference between the number of actual and expected births is also tested for statistical significance. In the following tables, an "H" appears for the counties where the number of actual births is statistically significantly higher than the expected number of births and an "L" appears for the counties where the number of actual births is statistically significantly lower than the expected number of births. For counties without an "H" or "L" the number of actual births is not statistically significantly different from the expected number of births. An alpha level of 0.05 is used for this test, which means that for the counties with an "H" or "L" there is a 5% chance that the difference between the actual and expected number is due to random variation.

Note that for larger counties, smaller differences between the statewide rate and the county rate may be statistically significant while the same or greater differences may not be statistically significant in smaller counties. This is because statistical significance depends in part on the magnitude of the numbers used in the calculations. Since the larger counties will have larger female teen populations and more teen births, the differences between the statewide rate and county rates are more likely to be statistically significant. In statistical testing, this is called statistical power. All of the data for the following tables are from the Florida Department of Health CHARTS website at: <http://www.flhealthcharts.com/charts/default.aspx>. The Poisson function in Excel was used for the statistical testing.

Results

In the following tables, actual statistics are compared to expected statistics. Counties with statistically significantly higher than expected statistics are indicated in the tables with an “H.” Counties with statistically significantly lower than expected statistics are indicated in the tables with an “L.” As shown in Table 1, there were 24 counties with an “H” for teen births among females aged 15-17, and 12 counties with an “L” for teen births among females aged 15-17. On Table 2 for teen births among females aged 15-19, there were 39 counties with an “H” and 14 counties with an “L.” On Table 3 for repeat births to teens aged 15-17, there were three counties with an “H” and one county with an “L.” On Table 4 for repeat births to teens aged 15-19, there were eight counties with an “H” and four counties with an “L.” On all of the tables, counties without an “H” or an “L” had rates that were not statistically significantly different from the expected rates.

Discussion

One limitation of this analysis is the comparatively high level of variability of rates in smaller counties. Consequently, larger differences in rates for small counties may not be statistically significant while the same or smaller differences may be statistically significant in larger counties. Actual rates that are statistically significantly higher than the expected rates are most likely not a result of random fluctuations and are cause for concern; however, higher rates that are not statistically significant may also warrant further investigation. Additionally, smaller counties with higher than expected rates for a period of several years may also be cause for concern.

This analysis may be used as a basis for establishing priorities and to inform strategies developed to reduce both teen births and repeat teen births in Florida. The rationale is to use the results of this analysis to focus further analysis and efforts on the counties where the risks are significantly high and also analyze factors that contribute to the lower risks seen in some counties.

Current Department of Health Teen Pregnancy Prevention Initiatives and Activities

Teen pregnancy prevention is one of CDC’s top six priorities and is considered a “winnable battle” in public health. Moreover, one of the Healthy People 2020 objectives is to reduce teen pregnancy.

- Prevention of initial or repeat teen births is a Family Planning program objective which aligns with the federal Title X Program priorities and key issues.
- Teen birth rate goals are included in the Department’s Long Range Program Plan (LRPP).
- A county health department (CHD) snapshot measure was developed in 2013 to track the number of teens who adopt an effective or higher method of contraception. Effective or higher contraception use increased from 84.1% in 2017 to 84.4% in 2018.
- CHDs are encouraged to increase reproductive health education including the provision of educational materials describing contraceptive methods to teens in schools and communities.
- CHDs are encouraged to make their family planning clinics teen-friendly. Teen-friendly services are critical to reaching teens and to promote adolescent health. Adolescents face barriers to services that are unique to their age group, such as transportation difficulties and school/work

schedules that conflict with appointments. As such, it is important to make family planning clinics teen-friendly.

- Long-acting reversible contraception (LARC) use among teens 15-19 increased from 10.2% in 2017 to 12.1% in 2018 (excluding teens who were pregnant, seeking pregnancy or abstinent). LARC methods are highly effective in preventing pregnancy and are seen as a significant tool in reducing unplanned or unwanted pregnancies.
- The State Sexual Risk Avoidance Education Grant allows youth aged 11-19 across multiple counties in the state to receive instruction on healthy relationships and avoiding risky sexual behavior via an evidenced-informed curriculum administered by county health departments and community organizations.
- The Positive Youth Development Initiative (PYD) provides county health departments with resources to enhance the strengths and assets of youth while mitigating risky behaviors through community service activities.

References:

1. Centers for Disease Control and Prevention. National and State Patterns of Teen Births in the United States, 1940-2013. *National Vital Statistics Reports*. 2014; 63 (4). http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_04.pdf. Accessed: September 10, 2015.
2. Florida CHARTS. <http://www.flhealthcharts.com/>. Accessed: July 26, 2019.
3. Centers for Disease Control and Prevention. Reproductive Health: Teen Pregnancy. <http://www.cdc.gov/teenpregnancy/>. Accessed on July 26, 2019.
4. Scholl, TO, Hediger, ML, Belsky, DH. Prenatal care and maternal health during adolescent pregnancy - A review and meta-analysis. *Journal of Adolescent Health*. 1994; 15:444-456.
5. Chandra, PC, Schiavello, HJ, Ravi, B, Weinstein, AG, Hook, FB. Pregnancy outcomes in urban teenagers. *International Journal of Gynecology and Obstetrics*. 2002; 79:117-122.
6. Chen, XK, Wen, SW, Fleming, N, Demissie, K, Rhoads, GG, Walker, M. Teenage pregnancy and adverse birth outcomes: A large population based retrospective cohort study. *International Journal of Epidemiology*. 2007; 36:368-373.
7. National Campaign to Prevent Teen Pregnancy. Why it Matters: Teen childbearing, education, and economic well-being. July 2012.

**Table 1: Florida Teen Birth Rates for Mothers Ages 15-17
2016 - 2018**

County	2016 - 2018 Number of Females 15-17	2016 - 2018 Actual Number of Births to Mothers 15-17	2016 - 2018 Expected Number of Births to Mothers 15-17	2016 - 2018 Number of Births per 1,000 Females 15-17	Statistical Significance*
Statewide	1,048,213	7,778	7,778	7.4	
Alachua	10,797	72	80	6.7	
Baker	1,491	20	11	13.4	H
Bay	8,456	111	63	13.1	H
Bradford	1,288	23	10	17.9	H
Brevard	28,217	171	209	6.1	L
Broward	102,788	503	763	4.9	L
Calhoun	807	5	6	6.2	
Charlotte	6,085	39	45	6.4	
Citrus	5,995	69	44	11.5	H
Clay	14,256	77	106	5.4	L
Collier	16,251	125	121	7.7	
Columbia	3,502	35	26	10.0	
Dade	141,643	798	1,051	5.6	L
Desoto	1,576	26	12	16.5	H
Dixie	805	8	6	9.9	
Duval	48,999	530	364	10.8	H
Escambia	15,729	196	117	12.5	H
Flagler	5,465	27	41	4.9	L
Franklin	365	5	3	13.7	
Gadsden	2,584	46	19	17.8	H
Gilchrist	972	11	7	11.3	
Glades	558	3	4	5.4	
Gulf	750	7	6	9.3	
Hamilton	674	7	5	10.4	
Hardee	1,651	23	12	13.9	H
Hendry	2,401	42	18	17.5	H
Hernando	9,552	57	71	6.0	
Highlands	4,451	35	33	7.9	
Hillsborough	77,096	626	572	8.1	H
Holmes	906	20	7	22.1	H
Indian River	6,622	58	49	8.8	
Jackson	2,124	30	16	14.1	H
Jefferson	587	8	4	13.6	
Lafayette	410	3	3	7.3	
Lake	16,565	132	123	8.0	
Lee	33,031	303	245	9.2	H
Leon	13,067	110	97	8.4	
Levy	1,990	16	15	8.0	
Liberty	420	3	3	7.1	
Madison	902	8	7	8.9	
Manatee	17,108	183	127	10.7	H
Marion	16,043	212	119	13.2	H
Martin	7,252	56	54	7.7	
Monroe	2,665	16	20	6.0	
Nassau	4,485	38	33	8.5	
Okaloosa	9,165	77	68	8.4	
Okeechobee	2,059	25	15	12.1	H
Orange	75,571	507	561	6.7	L
Osceola	22,205	138	165	6.2	L
Palm Beach	72,390	509	537	7.0	
Pasco	26,473	173	196	6.5	L
Pinellas	41,786	296	310	7.1	
Polk	37,344	373	277	10.0	H
Putnam	3,666	57	27	15.5	H
Saint Johns	13,153	47	98	3.6	L
Saint Lucie	15,750	106	117	6.7	
Santa Rosa	10,175	61	76	6.0	L
Sarasota	16,419	90	122	5.5	L
Seminole	26,049	81	193	3.1	L
Sumter	2,080	25	15	12.0	H
Suwannee	2,235	38	17	17.0	H
Taylor	961	14	7	14.6	H
Union	745	10	6	13.4	
Volusia	24,725	197	183	8.0	
Wakulla	1,678	11	12	6.6	
Walton	2,867	32	21	11.2	H
Washington	1,336	18	10	13.5	H

* H - county rate is statistically significantly higher than the state rate (alpha=0.05)

L - county rate is statistically significantly lower than the state rate (alpha= 0.05)

Blank - no statistically significant difference between the county rate and the state rate

**Table 2: Florida Teen Birth Rates for Mothers Ages 15-19
2016 - 2018**

County	2016 - 2018 Number of Females 15-19	2016 - 2018 Actual Number of Births to Mothers 15-19	2016 - 2018 Expected Number of Births to Mothers 15-19	2016 - 2018 Number of Births per 1,000 Females 15-19	Statistical Significance*
Statewide	1,740,427	31,722	31,722	18.2	
Alachua	33,081	368	603	11.1	L
Baker	2,541	108	46	42.5	H
Bay	13,774	456	251	33.1	H
Bradford	2,100	79	38	37.6	H
Brevard	44,650	719	814	16.1	L
Broward	162,217	2,053	2,957	12.7	L
Calhoun	1,211	40	22	33.0	H
Charlotte	9,380	189	171	20.1	
Citrus	8,854	224	161	25.3	H
Clay	21,634	333	394	15.4	L
Collier	25,171	450	459	17.9	
Columbia	5,560	202	101	36.3	H
Dade	232,167	3,226	4,232	13.9	L
Desoto	2,552	108	47	42.3	H
Dixie	1,199	45	22	37.5	H
Duval	81,113	2,114	1,478	26.1	H
Escambia	29,452	777	537	26.4	H
Flagler	7,908	122	144	15.4	L
Franklin	635	29	12	45.7	H
Gadsden	4,263	152	78	35.7	H
Gilchrist	1,495	54	27	36.1	H
Glades	889	10	16	11.2	
Gulf	1,115	35	20	31.4	H
Hamilton	1,030	51	19	49.5	H
Hardee	2,798	106	51	37.9	H
Hendry	3,850	151	70	39.2	H
Hernando	14,466	287	264	19.8	
Highlands	6,923	200	126	28.9	H
Hillsborough	130,865	2,458	2,385	18.8	
Holmes	1,488	58	27	39.0	H
Indian River	10,178	234	186	23.0	H
Jackson	3,992	142	73	35.6	H
Jefferson	989	23	18	23.3	
Lafayette	731	13	13	17.8	
Lake	25,890	548	472	21.2	H
Lee	53,577	1,140	977	21.3	H
Leon	41,112	419	749	10.2	L
Levy	3,065	82	56	26.8	H
Liberty	629	15	11	23.8	
Madison	1,388	39	25	28.1	H
Manatee	27,496	659	501	24.0	H
Marion	25,613	809	467	31.6	H
Martin	11,010	182	201	16.5	
Monroe	4,252	53	77	12.5	L
Nassau	6,641	166	121	25.0	H
Okaloosa	14,710	392	268	26.6	H
Okeechobee	3,336	138	61	41.4	H
Orange	133,080	2,100	2,426	15.8	L
Osceola	35,363	661	645	18.7	
Palm Beach	116,134	1,818	2,117	15.7	L
Pasco	42,446	816	774	19.2	
Pinellas	66,907	1,118	1,219	16.7	L
Polk	61,708	1,568	1,125	25.4	H
Putnam	5,959	235	109	39.4	H
Saint Johns	21,475	172	391	8.0	L
Saint Lucie	24,876	425	453	17.1	
Santa Rosa	15,283	270	279	17.7	
Sarasota	25,986	408	474	15.7	L
Seminole	41,341	425	754	10.3	L
Sumter	3,242	129	59	39.8	H
Suwannee	3,624	133	66	36.7	H
Taylor	1,497	62	27	41.4	H
Union	1,155	41	21	35.5	H
Volusia	42,283	834	771	19.7	H
Wakulla	2,635	60	48	22.8	
Walton	4,493	120	82	26.7	H
Washington	1,950	69	36	35.4	H

* H - county rate is statistically significantly higher than the state rate (alpha=0.05)

L - county rate is statistically significantly lower than the state rate (alpha= 0.05)

Blank - no statistically significant difference between the county rate and the state rate

**Table 3: Florida Repeat Birth Rates for Mothers Ages 15-17
2016 - 2018**

County	2016 - 2018 Number of Births to Females 15-17	2016 - 2018 Actual Number of Repeat Births to to Mothers 15-17	2016 - 2018 Expected Number of Repeat Births to to Mothers 15-17	2016 - 2018 Actual Percent Repeat Births to to Mothers 15-17	Statistical Significance*
Statewide	7,778	559	559	7.2%	
Alachua	72	3	5	4.2%	
Baker	20	1	1	5.0%	
Bay	111	7	8	6.3%	
Bradford	23	2	2	8.7%	
Brevard	171	6	12	3.5%	L
Broward	503	34	36	6.8%	
Calhoun	5	0	0	0.0%	
Charlotte	39	3	3	7.7%	
Citrus	69	5	5	7.2%	
Clay	77	3	6	3.9%	
Collier	125	4	9	3.2%	
Columbia	35	3	3	8.6%	
Dade	798	54	57	6.8%	
Desoto	26	3	2	11.5%	
Dixie	8	0	1	0.0%	
Duval	530	43	38	8.1%	
Escambia	196	13	14	6.6%	
Flagler	27	1	2	3.7%	
Franklin	5	0	0	0.0%	
Gadsden	46	2	3	4.3%	
Gilchrist	11	0	1	0.0%	
Glades	3	0	0	0.0%	
Gulf	7	0	1	0.0%	
Hamilton	7	1	1	14.3%	
Hardee	23	2	2	8.7%	
Hendry	42	2	3	4.8%	
Hernando	57	1	4	1.8%	
Highlands	35	1	3	2.9%	
Hillsborough	626	43	45	6.9%	
Holmes	20	3	1	15.0%	
Indian River	58	5	4	8.6%	
Jackson	30	3	2	10.0%	
Jefferson	8	2	1	25.0%	
Lafayette	3	1	0	33.3%	
Lake	132	7	9	5.3%	
Lee	303	19	22	6.3%	
Leon	110	12	8	10.9%	
Levy	16	2	1	12.5%	
Liberty	3	0	0	0.0%	
Madison	8	0	1	0.0%	
Manatee	183	21	13	11.5%	H
Marion	212	25	15	11.8%	H
Martin	56	2	4	3.6%	
Monroe	16	0	1	0.0%	
Nassau	38	5	3	13.2%	
Okaloosa	77	7	6	9.1%	
Okeechobee	25	5	2	20.0%	H
Orange	507	40	36	7.9%	
Osceola	138	6	10	4.3%	
Palm Beach	509	34	37	6.7%	
Pasco	173	12	12	6.9%	
Pinellas	296	19	21	6.4%	
Polk	373	27	27	7.2%	
Putnam	57	5	4	8.8%	
Saint Johns	47	4	3	8.5%	
Saint Lucie	106	8	8	7.5%	
Santa Rosa	61	1	4	1.6%	
Sarasota	90	9	6	10.0%	
Seminole	81	5	6	6.2%	
Sumter	25	2	2	8.0%	
Suwannee	38	5	3	13.2%	
Taylor	14	0	1	0.0%	
Union	10	1	1	10.0%	
Volusia	197	18	14	9.1%	
Wakulla	11	0	1	0.0%	
Walton	32	4	2	12.5%	
Washington	18	3	1	16.7%	

* H - county percentage is statistically significantly higher than the state rate (alpha=0.05)

L - county percentage is statistically significantly lower than the state rate (alpha= 0.05)

Blank - no statistically significant difference between the county rate and the state rate

**Table 4: Florida Repeat Birth Rates for Mothers Ages 15-19
2016 - 2018**

County	2016 - 2018 Number of Births to Females 15-19	2016 - 2018 Actual Number of Repeat Births to to Mothers 15-19	2016 - 2018 Expected Number of Repeat Births to to Mothers 15-19	2016 - 2018 Actual Percent Repeat Births to to Mothers 15-19	Statistical Significance*
Statewide	31,722	4,888	4,888	15.4%	
Alachua	368	48	57	13.0%	
Baker	108	17	17	15.7%	
Bay	456	69	70	15.1%	
Bradford	79	16	12	20.3%	
Brevard	719	97	111	13.5%	
Broward	2,053	319	316	15.5%	
Calhoun	40	11	6	27.5%	H
Charlotte	189	25	29	13.2%	
Citrus	224	29	35	12.9%	
Clay	333	45	51	13.5%	
Collier	450	59	69	13.1%	
Columbia	202	39	31	19.3%	
Dade	3,226	456	497	14.1%	L
Desoto	108	26	17	24.1%	H
Dixie	45	4	7	8.9%	
Duval	2,114	349	326	16.5%	
Escambia	777	138	120	17.8%	
Flagler	122	18	19	14.8%	
Franklin	29	9	4	31.0%	H
Gadsden	152	27	23	17.8%	
Gilchrist	54	5	8	9.3%	
Glades	10	0	2	0.0%	
Gulf	35	3	5	8.6%	
Hamilton	51	10	8	19.6%	
Hardee	106	23	16	21.7%	
Hendry	151	30	23	19.9%	
Hernando	287	37	44	12.9%	
Highlands	200	29	31	14.5%	
Hillsborough	2,458	374	379	15.2%	
Holmes	58	15	9	25.9%	H
Indian River	234	27	36	11.5%	
Jackson	142	19	22	13.4%	
Jefferson	23	5	4	21.7%	
Lafayette	13	6	2	46.2%	H
Lake	548	80	84	14.6%	
Lee	1,140	182	176	16.0%	
Leon	419	70	65	16.7%	
Levy	82	10	13	12.2%	
Liberty	15	4	2	26.7%	
Madison	39	2	6	5.1%	
Manatee	659	135	102	20.5%	H
Marion	809	140	125	17.3%	
Martin	182	28	28	15.4%	
Monroe	53	4	8	7.5%	
Nassau	166	22	26	13.3%	
Okaloosa	392	68	60	17.3%	
Okeechobee	138	32	21	23.2%	H
Orange	2,100	352	324	16.8%	
Osceola	661	73	102	11.0%	L
Palm Beach	1,818	276	280	15.2%	
Pasco	816	124	126	15.2%	
Pinellas	1,118	160	172	14.3%	
Polk	1,568	258	242	16.5%	
Putnam	235	37	36	15.7%	
Saint Johns	172	21	27	12.2%	
Saint Lucie	425	49	65	11.5%	L
Santa Rosa	270	39	42	14.4%	
Sarasota	408	59	63	14.5%	
Seminole	425	48	65	11.3%	L
Sumter	129	22	20	17.1%	
Suwannee	133	30	20	22.6%	H
Taylor	62	5	10	8.1%	
Union	41	6	6	14.6%	
Volusia	834	129	129	15.5%	
Wakulla	60	11	9	18.3%	
Walton	120	20	18	16.7%	
Washington	69	8	11	11.6%	

* H - county percentage is statistically significantly higher than the state rate (alpha=0.05)

L - county percentage is statistically significantly lower than the state rate (alpha= 0.05)

Blank - no statistically significant difference between the county rate and the state rate